UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,438	09/18/2003	Phil Van Dyke	VP087	8314

20178	7590	08/22/2005

EPSON RESEARCH AND DEVELOPMENT INC
INTELLECTUAL PROPERTY DEPT
150 RIVER OAKS PARKWAY, SUITE 225
SAN JOSE, CA 95134

EXAMINER
NGUYEN, HAU H

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	10/666,438	VAN DYKE ET AL.
Office Action Summary	Examiner	Art Unit
	Hau H. Nguyen	2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>18 September 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
  closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All   b)☐ Some *   c)☐ None of:

  1.☐ Certified copies of the priority documents have been received.

  2.☐ Certified copies of the priority documents have been received in Application No. _____.

  3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
    application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413)
                                                        Paper No(s)/Mail Date. _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)   5)☐ Notice of Informal Patent Application (PTO-152)
  Paper No(s)/Mail Date <u>09/18/2003</u>.   6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

2.   Claims 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply

with the enablement requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to enable one skilled in the art to which it pertains, or with

which it is most nearly connected, to make and/or use the invention. Claims 17 and 18 claim the

features "to apply... an offset factor prior to/after applying a transform matrix to the compressed

digital video data," which was not described in the specification.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-3, 5-7, 9-11, 19, 23-26, and 28 are rejected under 35 U.S.C. 102(e) as being

anticipated by MacInnis et al. (U.S. Patent No. 6,819,330).

Referring to claims 1, 5-6, 9, 19, 24, and 28, MacInnis et al. teach a graphics display

system, wherein as shown in Fig. 2, comprising a video decoder receiving video display data

having a color format (YUV format) associated with a first sub-sampling scheme, and a video

scaler 52 (a resizer block) for adjusting the size of the video data (col. 4, lines 31-53). With

reference to FIG. 18, the video decoder 50 preferably samples and synchronizes the analog video

input. The video receiver preferably receives an analog video signal 706 into an analog-to-

digital converter (ADC) 700 where the analog video is digitized. The digitized analog video 708

is preferably sub-sampled by a chroma-locked sample rate converter (SRC) 708 (first sub-

sampling scheme). A sampled video signal 710 is provided to an adaptive 2H comb

filter/chroma demodulator/luma processor 702 to be separated into YUV (luma and chroma)

components. The adaptive 2H comb filter provides the sampled video 712, which has been

separated into luma and chroma components and processed, to a line-locked SRC 704. The luma

and chroma components of the sample video is preferably sub-sampled once again by the line-

locked SRC and the sub-sampled video 714 is provided to a time base corrector (TBC) 72 (a

second sub-sampling scheme) (col. 33, lines 8-31) (conversion module, corresponding to claim

19). McInnis et al. further teach the time base corrector 72 includes a FIFO for storing the

decoded sampled video (Fig. 22, col. 39, lines 52-55) (memory storing compressed video data).

As shown in Fig. 1, McInnis et al. teach the graphics display system contained in the integrated

circuit 10 (a display controller, claim 19), coupling to the CPU 22 via bus 20. Although not

explicitly stated, a display panel is inherently associated with the graphics display system to

display the video data output from the graphics chip 10.

In regard to claims 2, 10, and 25, McInnis et al. teach the video scaler adjusts the size of

video data to a scaling factor (col. 4, lines 41-46).

In regard to claims 3 and 11, as shown in Fig. 5, McInnis et al. teach the YUV444-to-

YUV422 converter 138 converts graphics data from YUV 4:4:4 format to YUV 4:2:2 format

(converting the compressed data to a different format) (col. 9, lines 36-46), and store the

different color format data in the line buffer 59 (col. 10, lines 1-4).

As for claims 7 and 26, as cited above, McInnis et al. teach a YUV444-to-YUV422

converter 138 converts graphics data from YUV 4:4:4 format to YUV 4:2:2 format (first sub-

sampling scheme). McInnis et al. further teach the video windows are preferably always in YUV

format, although they can be in either 4:2:2 or 4:2:0 variants of YUV (col. 42, lines 28-30),

which implies the second sub-sampling scheme is a 4:2:0 sub-sampling scheme.

Referring to claim 23, McInnis et al. teach the input digital signals may be in the form of

decoded MPEG signals or other format of digital video (col. 3, lines 51-56).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 4, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over

MacInnis et al. (U.S. Patent No. 6,819,330) in view of Balkanski et al. (U.S. Patent No.

5,341,318).

Referring to claims 4, 8, and 12, as cited above, McInnis et al. teach all the limitations of

claims 4, 8, and 12, except for converting a frame of the stored compressed data through a lossy

compression scheme, and the lossy compression scheme is JPEG compression scheme.

However, Balkanski et al. teach a digital video compression/decompressing system,

which will operate at real time speed, i.e. able to compress at least thirty frames of true color

video per second, and to compress a full-color standard still frame within one second (col. 4,

lines 14-18). Balkanski et al. further teach the JPEG standard implements a " lossy" compression

algorithm (col. 13, lines 27-68).

Therefore, it would have been obvious to one skilled in the art to utilize the method as

taught by Balkanski et al. in combination with the method as taught by Balkanski et al. in order

to reduce the amount of memory for storing images, and reduce bandwidth for sending to display

(col. 53, lines 28-64).

7.   Claims 13, 15, 16, 21, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable

over MacInnis et al. (U.S. Patent No. 6,819,330) in view of Jiang (U.S. Patent No. 6,297,801).

Referring to claims 13 and 16, as cited above, McInnis et al. teach a display controller

comprising a resizer module (video scaler) receiving video data through a YUV color format,

capable of scaling video data; a conversion module compressing video data defined through the

YUV format; a memory region to stored the compressed video data. McInnis et al. further teach

outputting the compressed video data from the memory (under YUV format) to the display as

shown in Fig. 18, numeral 716 (col. 33, lines 27-31). Thus, McInnis et al. teach all the limitations

of claim 13, except for a color space conversion to convert the video data from the YUV color

format to RGB color format for display.

However, as shown in Fig. 1, Jiang teaches converting a compressed YUV format

graphic file to a displayed image. A compressed file 14 is expanded yielding a decompressed

file 16, although still in a luma/chroma format, such as YUV. The expanded YUV format is

converted to a RGB format 18 for displaying the graphic image 20 (col. 2, lines 10-17).

Therefore, it would have been obvious to one skilled in the art to utilize the method as

taught by Jiang in combination with the method as taught by McInnis et al. in order to expand

and display the compressed video data (col. 2, lines 30-35).

In regard to claim 15, as cited above, McInnis et al. teach the received video data is in

YUV 4:2:2 format, and the compressed video data is 4:2:0 format.

As for claims 21 and 27, which is similar in scope to claim 13; therefore are rejected

under the same rationale.

8.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacInnis et al.

(U.S. Patent No. 6,819,330) in view of Jiang (U.S. Patent No. 6,297,801), and further in view of

Balkanski et al. (U.S. Patent No. 5,341,318).

Referring to claim 14, as applied to claim 13 above, McInnis et al. and Jiang teach all the

limitations of claim 14, except for a JPEG block to encode video data.

However, as cited above, Balkanski et al. teach a JPEG block configured to encode

digital video data.

Therefore, it would have been obvious to one skilled in the art to utilize the method as

taught by Balkanski et al. in combination with the method as taught by Balkanski et al. in order

to reduce the amount of memory for storing images, and reduce bandwidth for sending to display

(col. 53, lines 28-64).

9.   Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacInnis et

al. (U.S. Patent No. 6,819,330) in view of Tamura et al. (U.S. Patent Application No.

2002/0057265).

Referring to claims 20-22, as applied to claim 19, McInnis et al. teach all the limitations

of claims 20-22, except for the digital video device is selected from the group of cellular phone,

a camcorder, and a personal digital assistant (PDA); a color space conversion to convert video

data from YUV to RGB for display; and the display controller is an LCD controller, and display

panel is an LCD display.

However, as shown in Fig. 1, Tamura et al. teach a display driver IC 100 (display

controller) with a built-in RAM in this embodiment includes a display data RAM 102 which

stores display data for at least one frame, and an MPEG decoder circuit 106 which decompresses

compressed data input through an input terminal 104 from outside the IC. The display driver IC

100 with a built-in RAM is controlled by an LCD timing control circuit 108 (page 5, paragraph

[108]). The driver IC is associated with an LCD display panel 110. The display data

decompressed by the MPEG decoder circuit 106 is converted into RGB format from YUV

format by an RGB conversion circuit 118. The display data in RGB format is written into the

storage region of the display data RAM 102 corresponding to the display region on a cycle

equivalent to the cycle for reading the display data from the display data RAM and driving the

display (page 6, par. [116]). Tamura et al. further teach the driver IC can be used in a portable

telephone as shown in Fig. 8 (page 10, par. [207]).

Therefore, it would have been obvious to one skilled in the art to utilize the method as

taught by Tamura et al. in combination with the method as taught by McInnis et al. in order to

obtain display unit capable of decreasing power consumption and excelling in visibility (page 4,

par. [76]).

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The

examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella can be reached on 571-272-7778.

The fax number for the organization where this application or proceeding is assigned is

703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

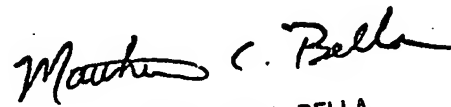system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system contact the Electronic Business Center (EBC) at 866-2 17-9197 (toll-free).

H. Nguyen

08/18/2005

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600